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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,357	10/07/2003	Riccardo Cesarini	7040.0054.01	3867

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EXAMINER	
MAKI, STEVEN D	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/679,357	CESARINI ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-62 and 111-158* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39-62,111-158* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 7-14-05 has been entered.

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Japan 408

3) **Claims 39-53, 55-58, 61-62, 111-125, 127-130, 133-149, 151-154 and 157-158 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 408 (JP 4-154408) in view of Great Britain 472 (GB 2224472), Japan 109 (JP 6-247109) and the admitted prior art (specification page 3 lines 1-5) and optionally Sommer (US 2104532).**

Japan 408 discloses a pneumatic tire having a (rubber) tread having a tread contact width and comprising alternating groups of slant transverse grooves extending from shoulder zones and into an equatorial zone wherein substantially continuous tread portions are defined by the slant transverse grooves. The pneumatic tire is a low aspect ratio radial tire having a size such as 225/50R16 (aspect ratio = 50%). See bottom right

on page 3 of Japan 408. The tire has good water drainage and reduced noise. The tire also prevents wandering phenomenon. As can be seen from figure 2, the substantially continuous tread portions are wider than the slant transverse grooves, each transverse groove has a straight uniform width equatorial groove portion, and the longest transverse groove extends across the equatorial plane. A zigzag circumferential groove (the only circumferential groove illustrated) extends through the center area of the tread. Each of the slant grooves (**some of which cross the EP**) terminate at the zigzag circumferential groove (instead of a zigzag central web). The substantially continuous tread portions on one side of the tire are not connected to the substantially continuous tread portions on the other side of the tire.

As to claim 111, it would have been obvious to one of ordinary skill in the art to connect the tread portions on one side of the directional tread of Japan 408's pneumatic radial tire having good water drainage to the tread portions on the other side of the tire so as to form a structurally stiff grid having slant grooves but no circumferential grooves (each substantially-continuous tread portion thereby ending at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves) since:

(1) Great Britain 472, directed to a pneumatic radial tire having *high degree of water drainage* (page 3 line 27) suggests forming tread portions defined between slant grooves of a directional (rubber) tread of a pneumatic radial tire such that the tread portions (rib profiles) on one side of the tire are connected to the tread portions (rib profiles) on the other side of the tire so as to form a herringbone-like profiling which is

continuous from the center of the tread surface to the open shoulders of the tire *so that the profile has very low development of noise (page 4 lines 1-4) and relatively high absorption of lateral forces and non-deformability of shape required when traveling rapidly round bends (page 4 lines 13-20)*; and

(2) Japan 109, directed to a pneumatic radial tire having *low noise and good water drainage* (abstract, paragraphs 19-24 of machine translation), suggests connecting substantially continuous tread portions on one side of the tire to substantially continuous tread portions on the other side of the tire in a directional (rubber) tread having slant grooves and no circumferential grooves wherein *some of the slant grooves cross the EP* (figure 1); and optionally

(3) Sommer shows a directional (rubber) tire tread having alternating groups of slant grooves (*some of which cross the EP* as shown in figure 8) and no circumferential grooves in which tread portions on one side of the tire are connected to tread portions on the other side of the tire.

Hence, Great Britain 472 and Japan 109 motivate one of ordinary skill in the art to connect the tread portions on one side of Japan 408's directional tire to the tread portions on the other side of the tire such that the resulting tread, which contains no circumferential grooves, has low noise and relatively high absorption of lateral forces and non-deformability of shape required when traveling rapidly round bends in addition to good water drainage.

It is acknowledged that Great Britain 472 teaches locating the beginnings of the slant grooves in the region of the center line so that large amounts of water are

conducted to the shoulder in an unhindered manner over the shortest path. However, Japan 408 and Japan 109 teach obtaining good drainage even when some of the slant grooves cross the EP. See figure 2 of Japan 408 and figure 1 of Japan 109. Moreover, Japan 109 shows extending some of the slant grooves across the EP even when the tread portions on one side are connected to tread portions on the other side such that the directional tread has no circumferential grooves.

As to tire construction, note that Japan 408's teaching that the tire is a pneumatic radial tire having a size such as 225/50R16. In any event: it would have been obvious to one of ordinary skill in the art to provide Japan 408's pneumatic radial tire with the claimed tire construction (i.e. carcass, sidewalls, beads, belt) since Great Britain '472 teaches that a pneumatic radial tire has a carcass, sidewalls, belt and beads (see figure 1, page 5 lines 30-34).

Japan 408 is silent as to curvature ratio. The limitation of the tire having a curvature ratio not greater than 0.1 would have been obvious since (1) Japan 408 teach that the tire, which is illustrated as having a relatively flat tread (figure 3) may have a size such as 225/50R16, which one of ordinary skill in the art would readily understand as being a car size tire and (2) the admitted prior art teaches that the curvature ratio of a conventional tire for motor vehicles (in contrast to motorcycle tires) has a value equal to about 0.05 and in any case is never higher than 0.1 (specification, page 3 lines 1-7).

As to claim 112, Japan 408's slant grooves may be inclined at 20 degrees with respect to the equatorial plane of the tire. See abstract.

As to claims 113-116 and 128-129, see Japan 408's slant grooves.

As to claim 117, see Japan 408's pitched tread pattern in which the slant grooves end at a relatively short distance from the same slant groove of an axially opposed group. Also, note the suggestion from Great Britain 472 and Japan 109 to connect Japan 408's tread portions on one side to the tread portions on the other side - the resulting zigzag central web separating the end of a slant from the same slant groove of an axially opposed group.

As to claim 118, the claimed radius of curvature would have been obvious in view of Japan 408's teaching to connect the steeply inclined part of the slant groove to the gently inclined part of the slant groove with a curved portion.

As to claim 119, the claimed angle for the shoulder groove portion would have been obvious in view of Japan 408, Great Britain 472 and Japan 109's teaching to incline the portion of the slant groove in the shoulder at a relatively large angle.

As to claims 120 and 124, the claimed transversal groove width and depth would have been obvious and could have been determined without undue experimentation in view of Japan 408, Great Britain 472 and Japan 109's teaching to use the slant grooves to discharge water to the shoulders of the tread.

As to claim 121, it would have been obvious to narrow the inclined slant grooves in the shoulder zones to the claimed width of 40-60% since Japan '109 teaches that the narrow width branching groove may have a width of 40% of the inclined grooves to secure block rigidity and decrease noise.

As to claim 122, see figure 2 of Japan 408, which shows the ground contact width of the tread.

As to claim 123, Japan 408 suggests using plural slant grooves in each group.

As to claim 125, note staggering of the groups of transverse grooves shown by Japan 408.

As to claim 127, it would have been obvious to add the claimed transverse notches in Japan 408's tread since Great Britain '472 suggests adding short blind grooves (notches) 48, 58 between inclined grooves to the shoulder zones of a tread.

As to claims 130 and 133-134, one of ordinary skill in the art would readily understand Japan 408 as teaching providing a set of front tire and rear tires since 225/50R16 is a car size tire. The claimed number of transversal grooves in each group would have been obvious in view of Japan 408's teaching to use plural slant grooves in each group.

As to claims 39-53, 55-58 and 61-62, it would have it would have been obvious to narrow Japan 408's inclined slant grooves in the shoulder zones since Japan '109 teaches that the narrow width branching groove may have a width of 40% of the inclined grooves to secure block rigidity and decrease noise. Also, note comments on claims 111-125, 127-129 and claims 130,133-134.

As to claims 135-149, 151-154, 157-158, note Great Britain 472's teaching to connect so that the resulting profile has relatively high absorption of lateral forces and non-deformability of shape.

4) **Claims 60, 132 and 156 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 408 in view of Great Britain 472, Japan 109 and admitted**

prior art and optionally Sommer as applied above and further in view of Europe '851 (EP 722851).

As to claims 60, 132 and 156, it would have been obvious to provide Japan 408's tires as a set of front tires and a set of different rear tires with different chords (different tire section widths / different tread widths) as claimed in view of Europe '851's suggestion to use different front and rear tires wherein each of those tires comprises inclined grooves but no circumferential grooves.

Sommer

5) **Claims 39-53, 55-58, 111-125, 127-130, 135-149 and 151-154 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer (US 2104532) in view of Great Britain '472 (GB 2224472), the admitted prior art (specification page 3 lines 1-5) and optionally at least one of Hargraves (US 1996418) and Japan '109 (JP 6-247109).**

Sommer, directed to preventing sliding of a tire on a wet road, discloses a pneumatic vehicle tire (automobile tire) having a tread comprising repeating groups of four inclined transversal grooves of different lengths wherein the groups of inclined transversal grooves on one side of the center plane of the tire alternate with the groups of inclined transversal grooves on the other side so that a zigzag strip exists at the center plane of the tire. See figure 8, figure 8a and page 3 lines 17. Sommer states that the "tread of Figs. 8 and 8a has only slanting grooves 51 and ribs 53 running from the sides of the tire to its center plane in opposite directions " (page 3 lines 1-3). Accordingly, the tread has no circumferential grooves. The width of the grooves is ¼ to

5 mm. The width of the ribs (land portions between the grooves) is 3-10 mm. For example, the groove may have a width of 5 mm and the rib may have a width of 10 mm - the ribs thereby being wider than the grooves. See page 1 right column line 51 to page 2 left column lines 1-15. Sommer does not specifically recite that the tire has a carcass, belt and beads.

As to claims 39, 111 and 135, it would have been obvious to one of ordinary skill in the art to provide the automobile tire of Sommer with the claimed tire construction (i.e. carcass, sidewalls, beads, belt) since Great Britain '472, also disclosing a tire tread having inclined grooves but no circumferential grooves, teaches using such a tread in a vehicle tire having a carcass, sidewalls, belt and beads (see figure 1, page 5 lines 30-34). The limitation of the tire having a curvature ratio not greater than 0.1 would have been obvious since (1) Sommer, which teaches that the tread may be used for an automobile, shows the profile of the tread as defining a relatively small curvature ratio (see figure 1), (2) Great Britain '472, which teaches that the tread may be used for a vehicle, shows the profile of the tread as defining a relatively small curvature ratio (see figure 1) and (3) the admitted prior art teaches that the curvature ratio of a conventional tire for motor vehicles (in contrast to motorcycle tires) has a value equal to about 0.05 and in any case is never higher than 0.1 (specification, page 3 lines 1-7).

In claim 39, the claimed subject matter of "wherein each substantially-continuous tread portion ends at an equatorial groove portion of a same transversal groove of an axially-opposed group of transversal grooves, wherein each of the transversal grooves ends at a predetermined distance from the equatorial groove portion of a longest

transversal groove of the axially-opposed group of transversal grooves so that all of the transversal grooves end within the equatorial zone" and the added subject matter at lines 27-30 of claim 39 reads on the arrangement of inclined transversal grooves shown by Sommers in figures 8 and 8a. In any event: it would have been obvious to one of ordinary skill in the art to arrange Sommers' inclined transversal grooves of differing lengths such that the longest groove of each group crosses the EP and the end of each inclined transversal groove of one group on one side of the tread is spaced the same distance from the longest inclined transversal groove of the group on the other side of the tread since Hargraves suggests arranging alternating groups of inclined transversal grooves of differing lengths in a tread for an automobile such that each inclined transversal groove ends at the same predetermined distance from an axially opposed longest inclined transversal groove for the advantage of giving sufficient traction, resisting skiding in all directions and reducing noise.

As to claim 111, "structurally stiff grid" reads on the profiling shown by Somers in figures 8, 8a; "structurally stiff" being a relative expression failing to define a stiffness different from that disclosed by Sommers.

As to claim 135, "stresses imparted to the substantially-continuous portions are discharged along the axis" fails to define tread portions different from that disclosed by Sommer; it being noted that at least part of stresses must be discharged as claimed when Sommer's tire rolls.

As to claims 39, and 135, Sommer's grooves have uniform width. In any event: it would have been obvious to one of ordinary skill in the art to provide Sommer's

transversal grooves, which are for preventing sliding on a wet road (page 1 lines 10-12), such that "the equatorial groove portion of each transversal groove has a uniform width" and "the shoulder groove portion of each transverse groove has at least a portion having a width smaller than the width of the equatorial groove portion" since Japan '109, also directed to a tire having inclined grooves but no circumferential grooves, teaches providing inclined grooves in an equatorial zone with a uniform width and providing branching grooves in the shoulder zones with a smaller width than the inclined grooves in the equatorial zone portion in order to obtain high wet performance and low noise. Hence, Sommer and Japan '109 are both directed to a directional tread pattern having inclined grooves for preventing slipping on wet roads wherein the inclined grooves on one side are shifted relative to the inclined grooves on the other side. See figure 8, 8a of Sommer and figures 1-3 of Japan '109. Japan '109 suggests improving such a directional tread pattern by using branching grooves having a narrower width and a larger angle of inclination to the EP than that for the inclined grooves. The improvement includes reducing noise. See for example paragraph 26 of the machine translation of Japan '109. The combination of a branch groove 3 and an inclined groove 2 constitutes a transversal groove. With respect to figures 1-3 of Japan '109, uniform width inclined grooves 2 in figures 1 and 2 are an alternative to varying width inclined grooves in figure 2. The tread patterns of figures 1 and 2 are asymmetric tread patterns. Japan '109 teaches that the tread pattern may be symmetric instead of asymmetric. See paragraph 12 of machine translation for Japan '109 and figure 2 of Japan '109.

As to claim 40, Sommer's inclined transversal grooves are inclined at angle of more than 45 degrees.

Claim 41 fails to define a tread pattern different from that shown by Sommers and suggested by the optional Hargraves.

As to claims 42-44, Sommer suggests straight and parallel inclined transversal grooves and Japan '109 suggests straight and parallel inclined grooves.

As to claim 45, Sommer and the optional Hargraves suggest ending the inclined grooves close the longest groove of the group on the other side of the tire.

As to claims 46-47, it would have been obvious to shape the inclined grooves of Sommers such that the shoulder portion is less steeply inclined and connected via a curved groove portion with the equatorial zone portion of the inclined groove in view of (1) Japan '109's teaching to incline the narrow branching groove of the inclined groove 2 at a larger angle with respect to the EP and (2) Great Britain '472's teaching to increase the inclination of inclined grooves in shoulder zones of the tire as shown in figure 2 to provide a good non-skid facility, etc while maintaining open drainage paths. Hence, Japan '109 and Great Britain '472 motivate one of ordinary skill in the art to configure Sommer's transversal grooves so as to have a shallow inclined portion and a steeply inclined portion.

As to claim 48, Sommers teaches a groove width of 5 mm.

As to claims 49-50, it would have been obvious to narrow the inclined transversal grooves in the shoulder zones to the claimed width of 40-60% since Japan '109 teaches

that the narrow width branching groove may have a width of 40% of the inclined grooves.

As to claim 51, Sommers shows four inclined grooves.

As to claim 52, Sommers teaches a groove depth of 6 mm.

As to claim 53, it would have been obvious to longitudinally stagger by about 50% of a mean pitch since Sommers and the optional Hargraves show circumferentially shifting one group of grooves relative to another group of grooves.

As to claim 55, it would have been obvious to add the claimed transverse notches in Sommer's tread since Great Britain '472 suggests adding short blind grooves (notches) 48, 58 between inclined grooves to the shoulder zones of a tread, which like that of Sommers has no circumferential grooves.

As to claim 56, Sommer's inclined grooves have the claimed decreasing length.

Claim 57 fails to define a tread pattern different from that shown by Sommers and suggested by the optional Hargraves.

As to claim 58, one of ordinary skill in the art would readily understand Sommer as teaching providing a set of front tire and rear tires having the tread pattern of figures 8, 8a since Sommer's teaches using the tire on an automobile. As to 3-5 (front) and 5-7 (rear), it would have been obvious to use five inclined grooves in each group since (1) Sommer's suggests using plural (i.e. four) inclined grooves in each group and optionally (2) Hargraves shows using five inclined grooves in a group.

As to the remaining claims, note comments on above specifically noted claims. With respect to claims 112 and 136, for example, see comments on claim 40.

6) **Claims 54, 126 and 150 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer in view of Great Britain '472, the admitted prior art and optionally at least one of Hargraves and Japan 109 as applied above and further in view of Europe '270 (EP 565270).**

As to claims 54, 126 and 150, it would have been obvious to add the claimed longitudinal slots to Sommer's tread since (1) Sommers teaches that the tread may also comprise circumferential grooves (figure 9) and (2) Europe '270 suggests adding circumferential grooves 3, 3, which cross inclined grooves, between the shoulder zone and equatorial zone to improve resistance to hydroplaning.

7) **Claims 59-62, 131-134 and 155-158 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer in view of Great Britain '472, the admitted prior art and optionally at least one of Hargraves and Japan 109 as applied above and further in view of Europe '851 (EP 722851).**

As to claims 59-62, 131-134 and 155-158, it would have been obvious to provide the front and rear tires of Sommers as a set of front tires and a set of different rear tires as claimed in view of Europe '851's suggestion to use different front and rear tires wherein each of those tires comprises inclined grooves but no circumferential grooves.

Remarks

8) Applicant's arguments with respect to claims 39-62 and 111-158 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 7-14-05 have been fully considered but they are not persuasive.

With respect to claims 39 and 58, applicant argues that the applied references fail to teach or suggest the added feature. Examiner disagrees since (1) the longest slant groove in each group of slant grooves in Sommer's figure 8 / 8a embodiment cross the EP, (2) Hargraves shows at least the longest slant groove of each group crossing the EP and (3) Japan 109 shows some slant grooves crossing the EP in figure 1.

9) No claim is allowed.

10) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
September 29, 2005

Steven D. Maki 9-29-05
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AU 1733